

17555

11718

3 Hours / 100 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Answer each next main Question on a new page.
 - (3) Illustrate your answers with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.
 - (5) Assume suitable data, if necessary.
 - (6) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following :

20

- (a) What is wavelength standard ? State its advantages over the material standard.
- (b) Explain the concept of selective fit assembly.
- (c) State the various basic objectives of quality control.
- (d) Give the classification of inspection. Explain any one in detail.
- (e) State the advantages and disadvantages of ultrasonic inspection.
- (f) State the various types of leaks. Explain any one with suitable sketch.
- (g) Explain the procedure of preparing the specimen for the tensile testing.

2. Attempt any FOUR of the following : 16

- (a) Explain differential pneumatic comparator with suitable sketch.
- (b) Explain the Taylor's principle of gauge design.
- (c) Explain the concept of Quality of Design. State the factors affecting on the Quality of Design.
- (d) Explain the various duties of Quality Inspector.
- (e) Explain the X-ray radiographic testing with neat sketch.
- (f) State the use of any two etching reagents for the etch test.

3. Attempt any FOUR of the following : 16

- (a) Define End standards. State the various characteristics of end standards.
- (b) State the various requirements of the material for gauges.
- (c) Explain any four principles of TQM.
- (d) Explain the important parameters in inspection planning.
- (e) Explain the steps involved in the fluorescent-penetrant inspection with neat sketch.
- (f) Explain the procedure for performing nick break test.

4. Attempt any FOUR of the following : 16

- (a) State the requirements of the good comparator.
- (b) Explain how the testing of non-magnetic material is done.
- (c) State the advantages and disadvantages of non-destructive testing.

- (d) Explain the longitudinal bend test with neat sketch.
- (e) Explain the procedure of preparing the specimen for nick break test.
- (f) What is an ASTM and ASME code ?

5. Attempt any FOUR of the following :

16

- (a) Explain the magnetic particle inspection with sequence of operation.
- (b) Explain the safety precaution needed for X-ray and Gamma rays testing.
- (c) Explain the procedure of leak test under fluid pressure.
- (d) Explain the principle of compression test with neat sketch.
- (e) Explain the working principle of impact testing.
- (f) What are DIN and IBR ?

6. Attempt any FOUR of the following :

16

- (a) Explain the Eddy current testing with neat sketch.
 - (b) State the various advantages and disadvantage of ultrasonic testing.
 - (c) Describe leak test by water soluble paper with aluminium foil for welded pressure vessel.
 - (d) Explain the procedure of Charpy test and format of test report of it.
 - (e) State the various types of hardness test. State its purposes.
 - (f) State any two codes for pressure vessels as per ASTM.
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